



Cosmological Principle



56 0 5

Chapter 1 by Roggen Wulf

Assuming that all matter is both homogeneous and isotropic, the universe can only exist in one of three shapes.

He glanced up to find his wife watching him from across the room. Her expression was pensive, her breath short and nervous. Between them stood their child, the Reductive HDFM Generator. One of its three tall, metal arms obscured her from view as she moved to one of the control stations, examining the computer screen.

“Conditions inside the generator are exactly what we were expecting of Moment -0.01,” she said.

“Then we're ready,” he murmured.

She nodded. “Release the field inhibitors.”

Which of these three shapes describes our universe, if indeed any do, depends upon a critical density. A universe with a density equal to six hydrogen atoms per cubic meter is a flat plane reaching to infinity. If the universe falls below this density, it is curved but still infinite; the curves rising away forever.

With trembling hands, he lowered the fields preventing the generator from accelerating the reaction straining to take place within it. A point of brilliant light exploded from within the space between the machine's arms. The two scientists stared in awe, ignoring the voices outside their

laboratory, the fists pounding on the door, as they had all the other warnings against performing this experiment. They had been a

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Moving close to him, she entwined her fingers with his as they watched the point of light expand. Miniature stars formed before their eyes, scattering across a tiny universe like gems

suspended in the air.

If the density of our universe exceeds the critical density, it is closed and finite; a sphere expanding in all directions but doomed to collapse upon itself. What shape might it be, however, if the universe does not obey our assumption that all matter is homogeneous and isotropic on a scale so vast only gods can see it with certainty?

There seemed only one way to know.

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